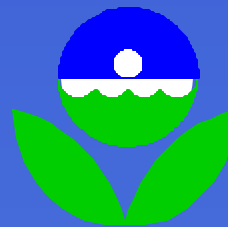


Caps, Croakers and Institutional Controls

An Overview of the Palos Verdes Shelf

**EPA Engineering Forum
May 8, 2001**



EPA
Region 9

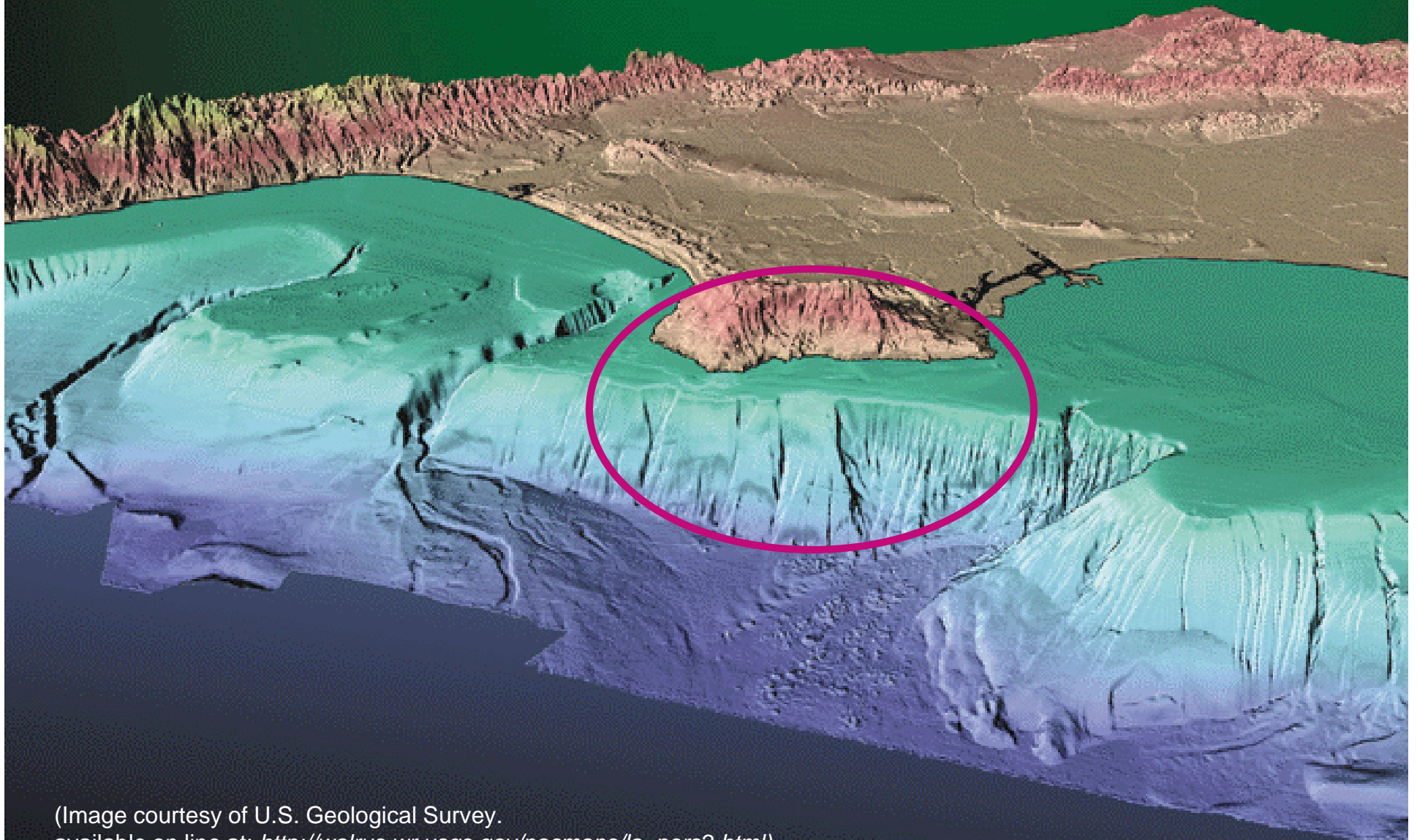
Outline of Presentation

- ' **Background**
- ' **Institutional Controls**
- ' **Evaluation of Cleanup Options**
 - **Pilot Capping Project**

Palos Verdes Shelf Site Map

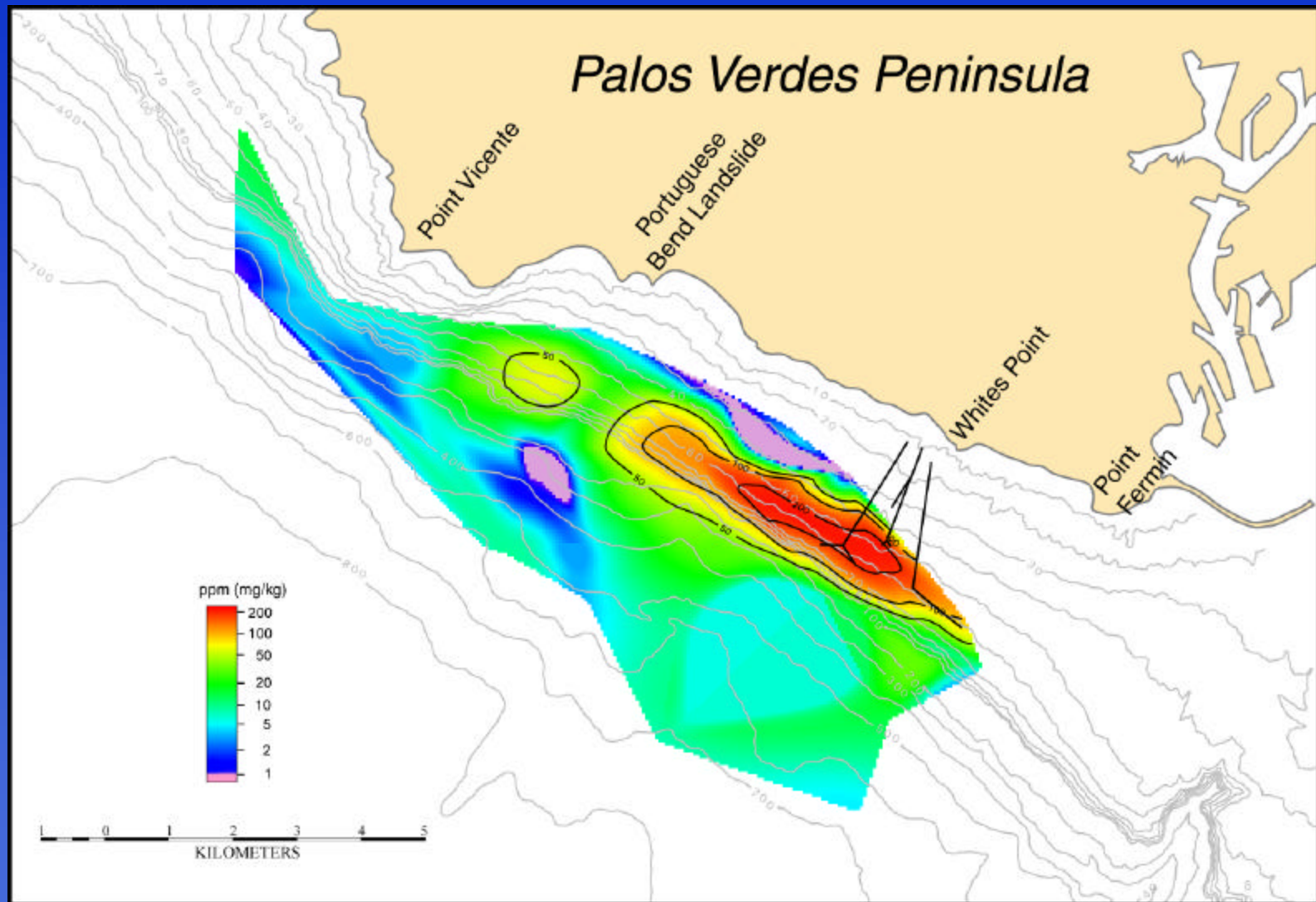


Palos Verdes Shelf

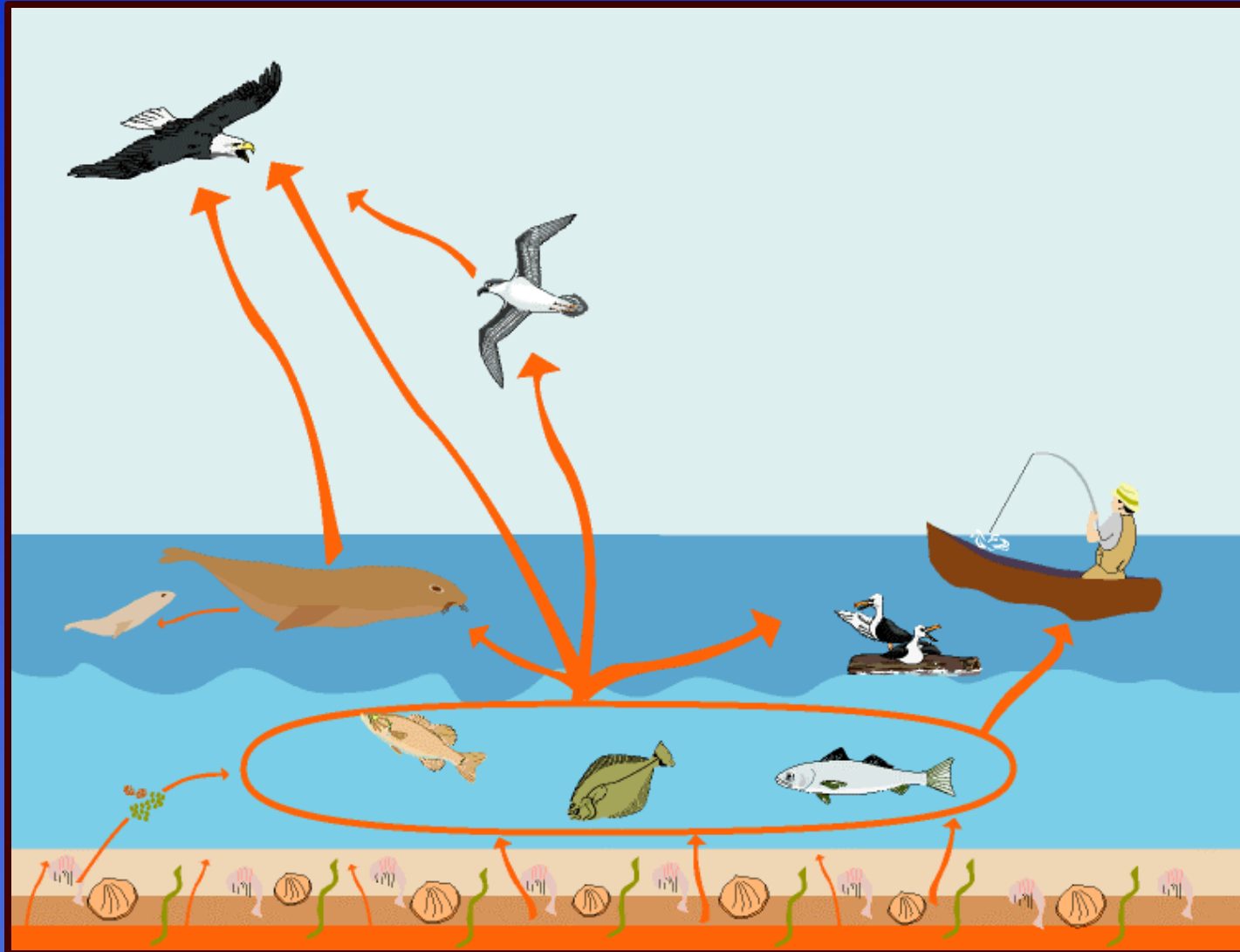


(Image courtesy of U.S. Geological Survey.
available on line at: http://walrus.wr.usgs.gov/pacmaps/la_pers2.html)

Peak Total DDT in Sediment



Food Web Pathways



Recent History of the PV Shelf

1990-94	Natural Resources Damage Assessment (including Feasibility Study for cleanup)
1996 to Present	EPA Superfund investigation (non-time-critical removal action)
1997	Screening Evaluation of Cleanup Technologies
1999	Report on Options for <i>In-situ</i> Capping
2000	EE/CA Report Proposed Plan for Institutional Controls Pilot <i>In-situ</i> Capping Project

The Superfund Process for PV Shelf Cleanup Actions



Institutional Controls

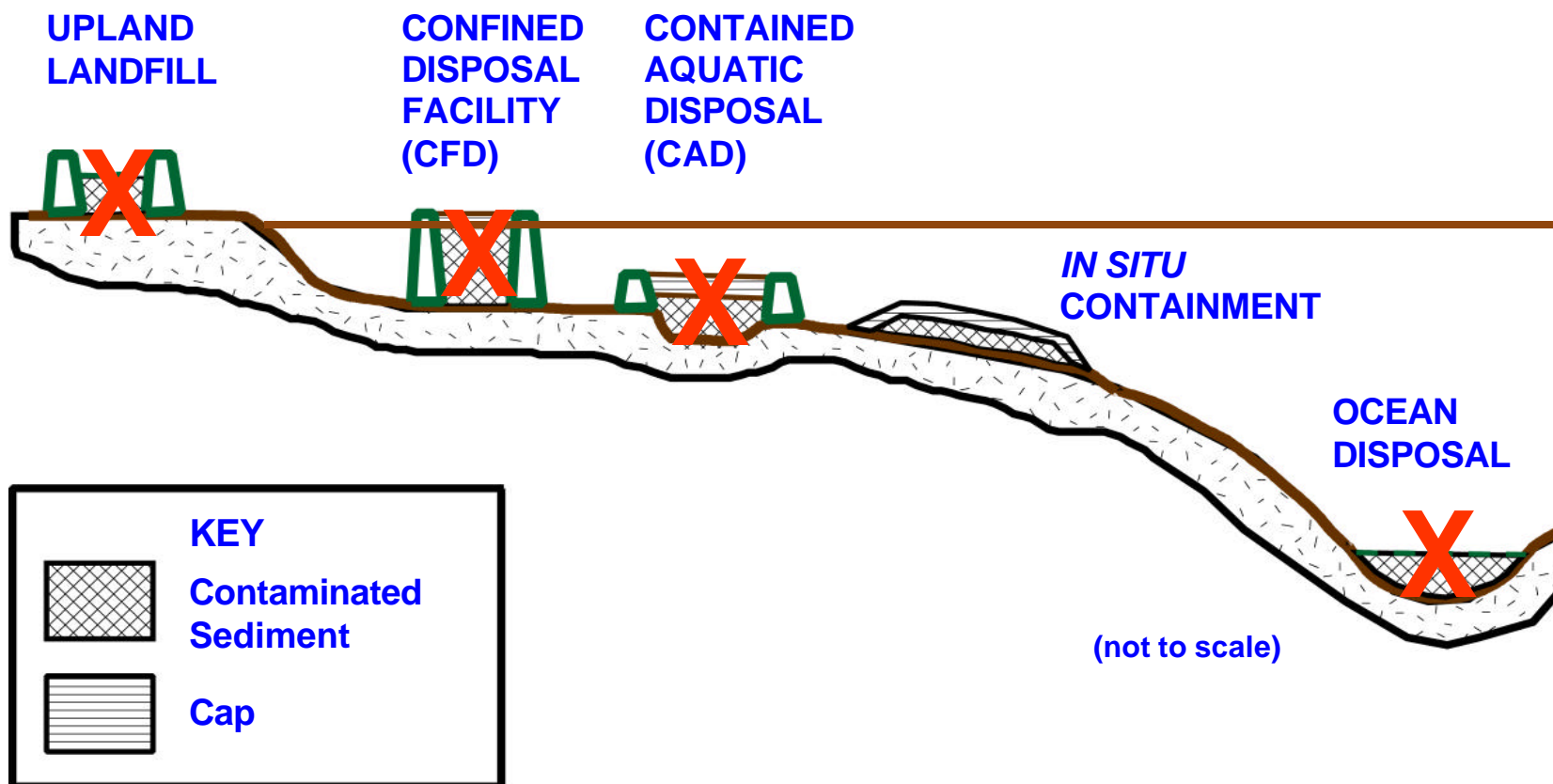
- ' **Public Outreach & Education**

- ' **Monitoring (markets & ocean)**



- ' **Enforcement of White Croaker fishing ban & catch limit**

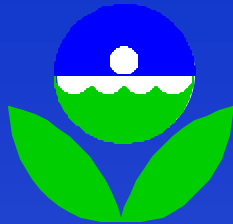
Options for Sediment Cleanup



Objectives of the Pilot Project

- ' **Demonstrate Constructability**
- ' **Evaluate Short-term Impacts of Cap Placement**
- ' **Evaluate Capping Methods & Materials**

Project Team

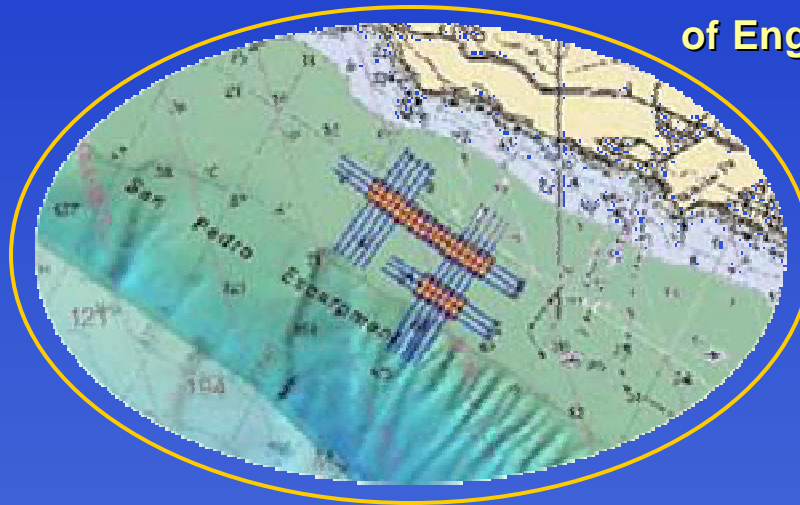


EPA
Region IX



*L.A. District
New England
WES
Seattle*

**US Army Corps
of Engineers®**



**Newport
San Diego
Raleigh**



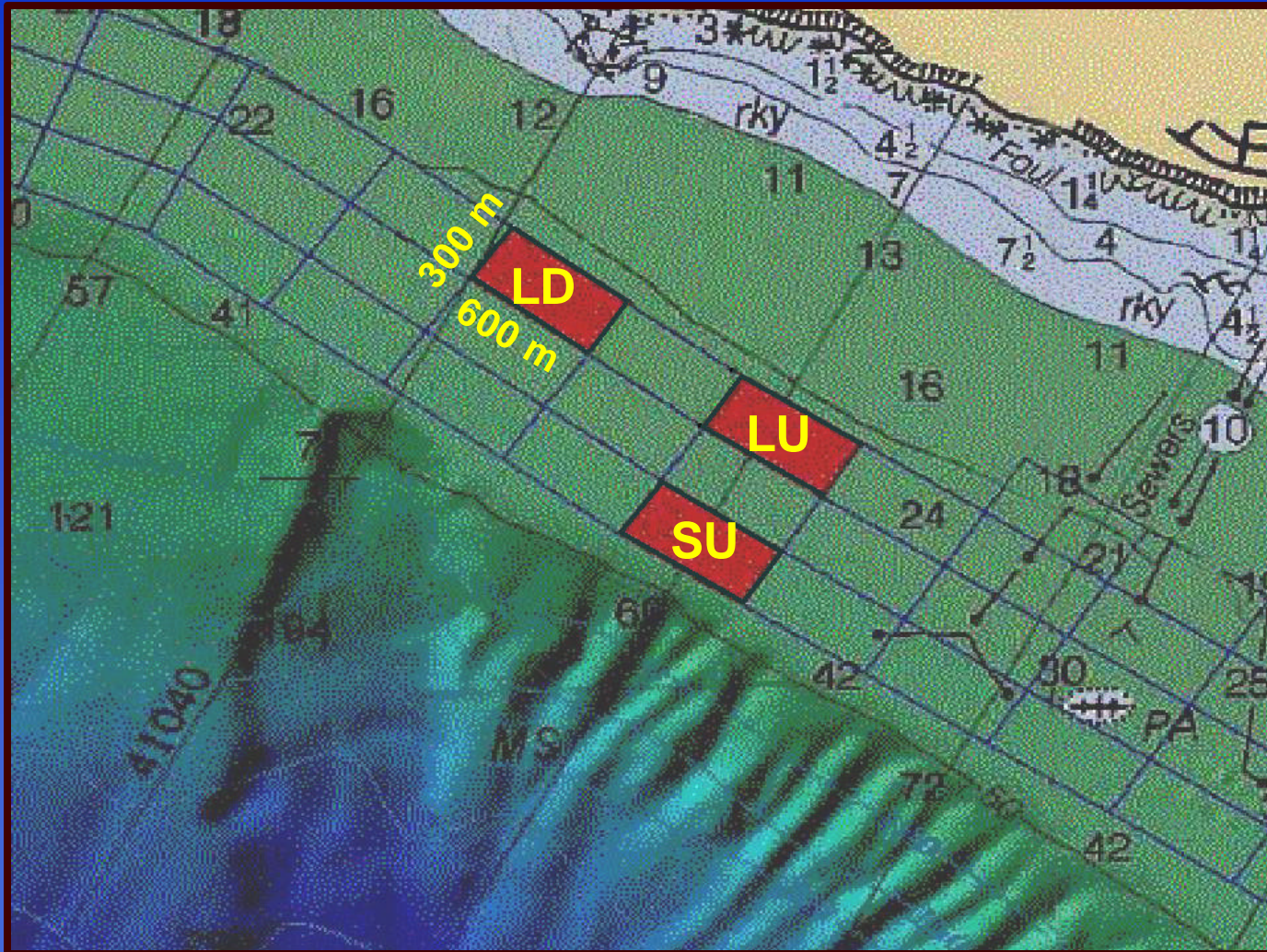
NATCO



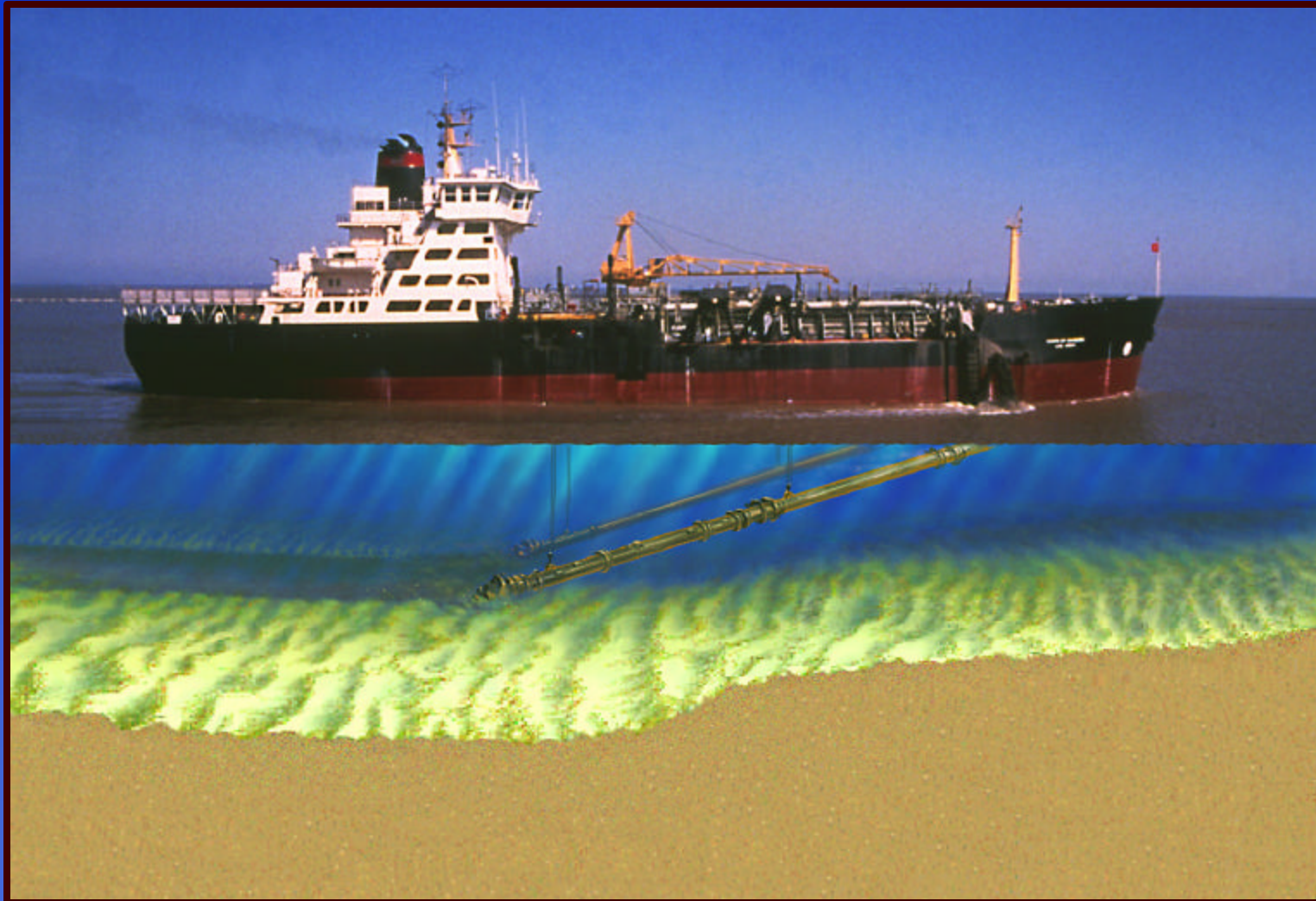
Pilot Project Map



Pilot Capping Cells



Typical Hopper Dredge

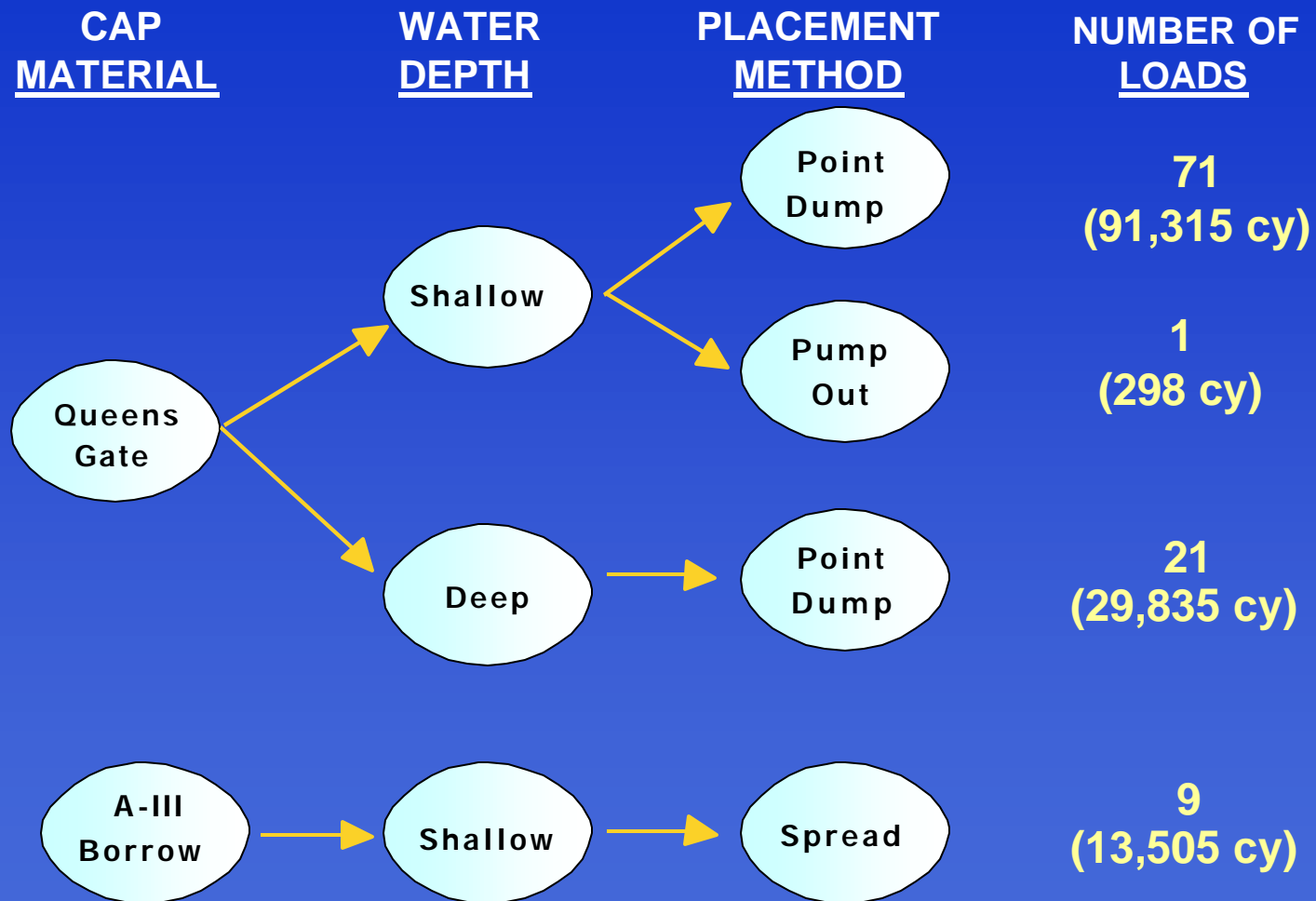




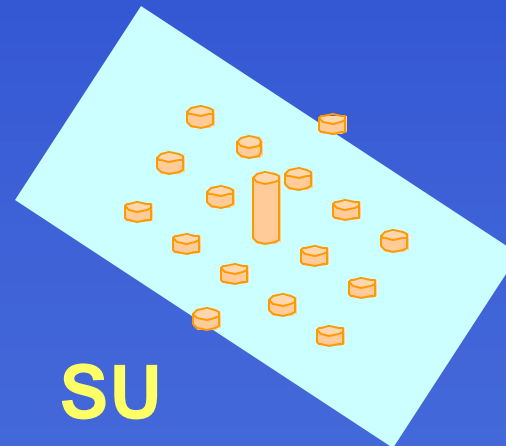
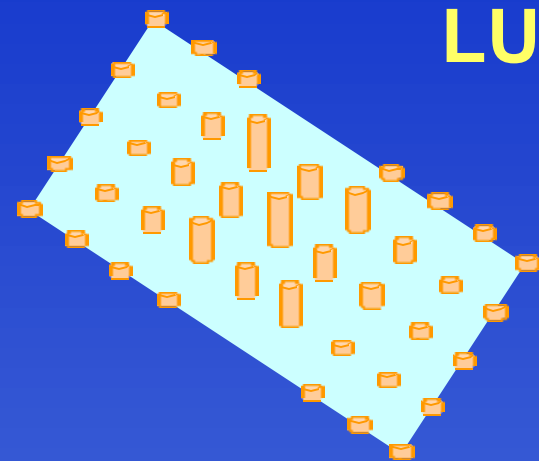
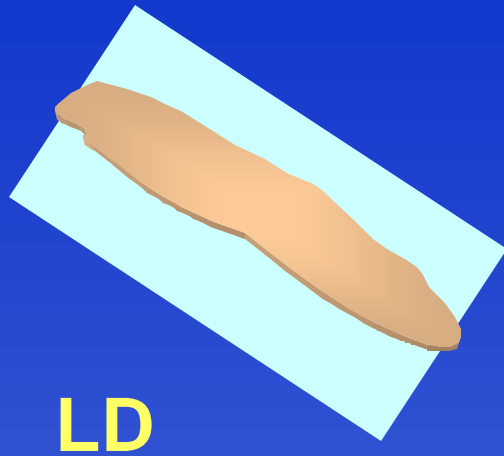
Palos Verdes Shelf

US EPA Region 9

Pilot Project Capping Summary

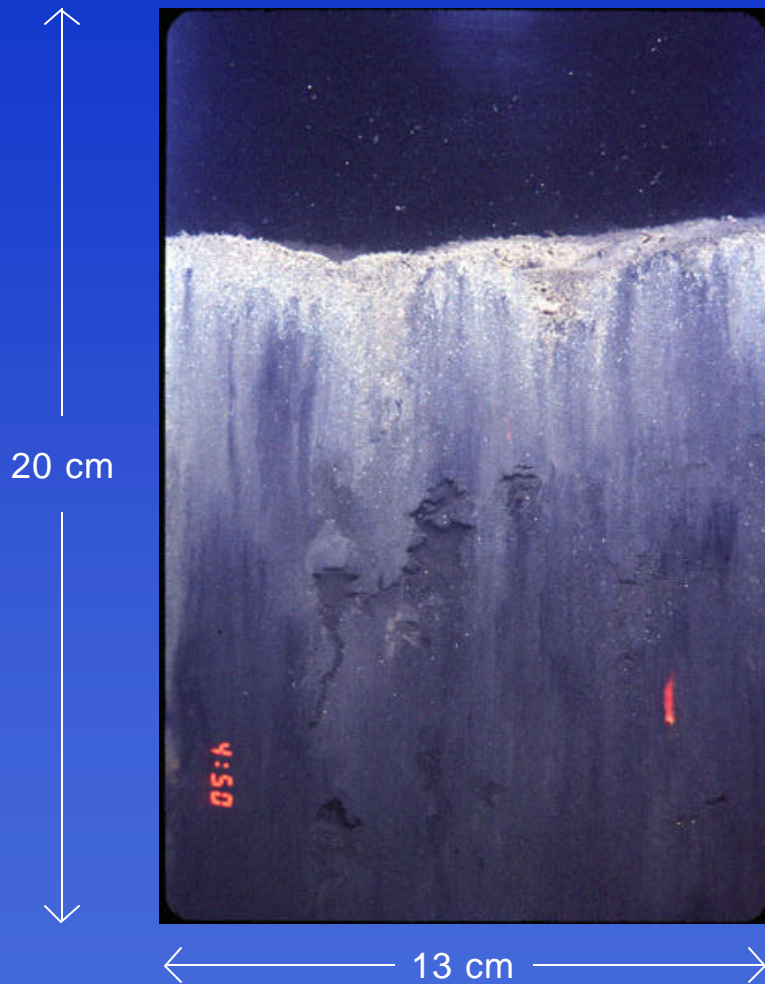


Placement Locations

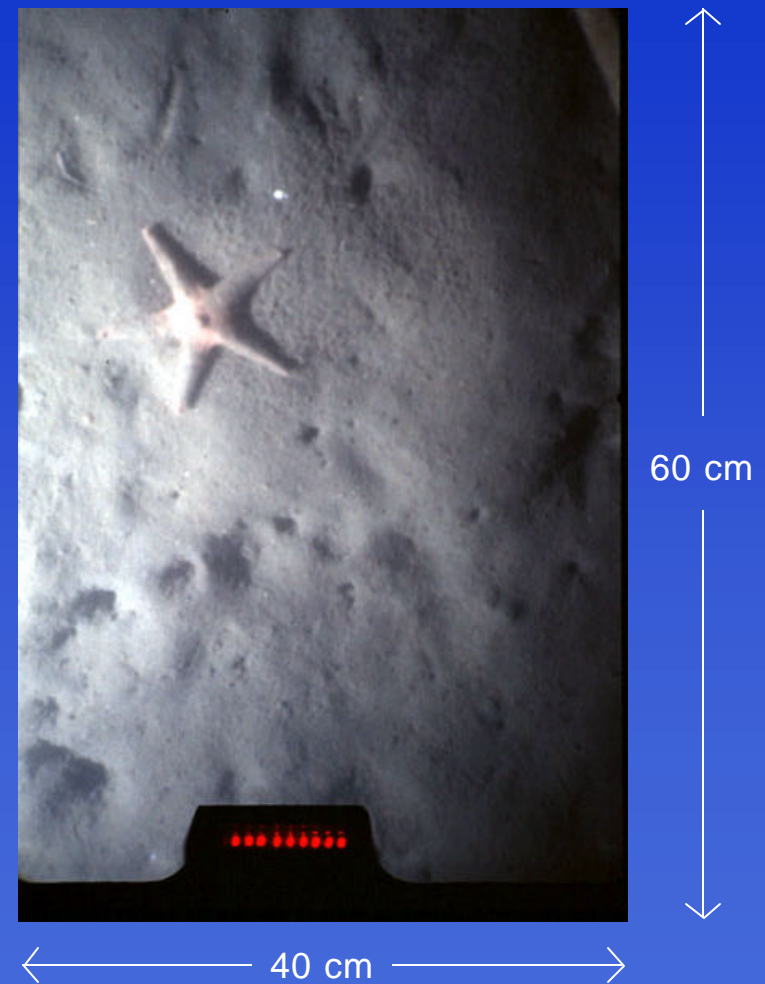


 = 1 load

Profile



Plan View

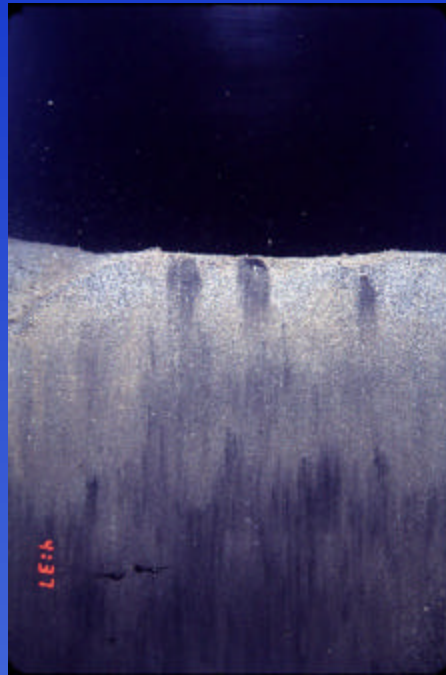


Conventional Placement

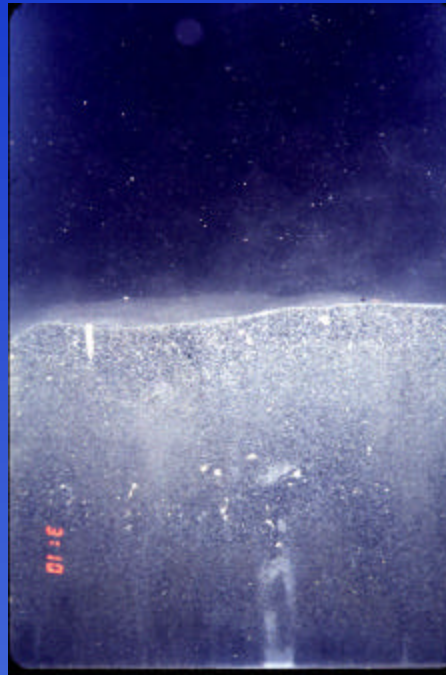
Baseline



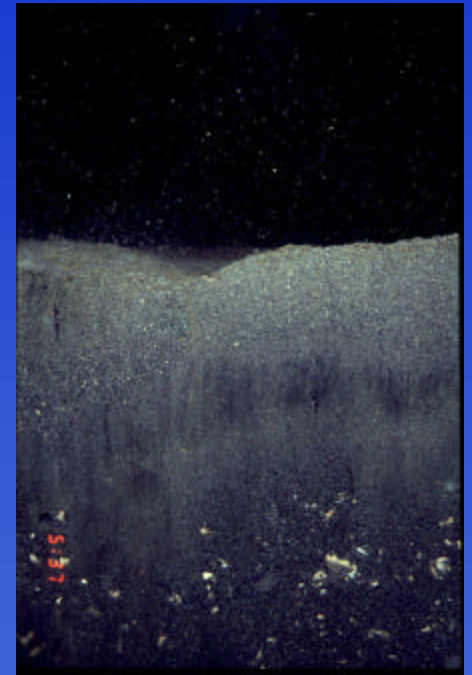
After initial dump



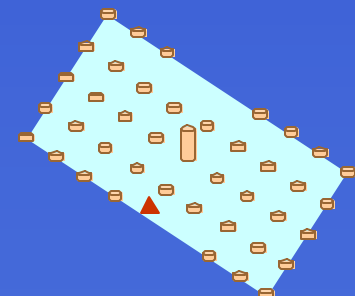
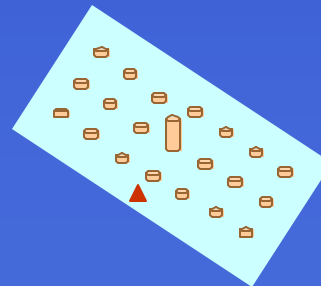
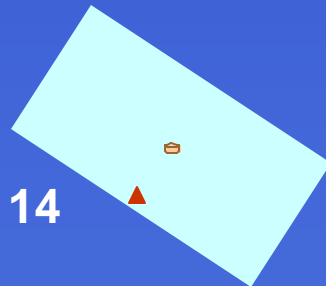
After 25 dumps



After 45 dumps

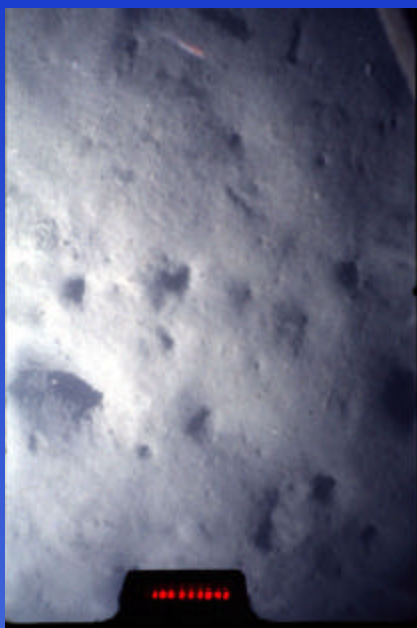


Cell LU - Station 14

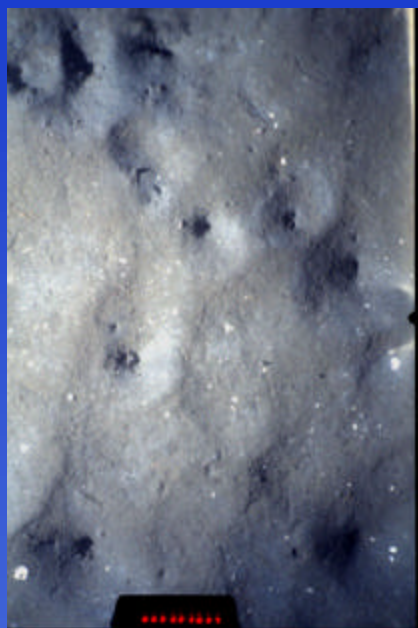


Conventional Placement

Baseline



After initial dump



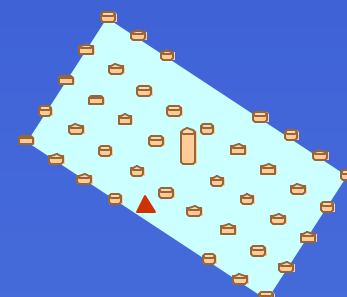
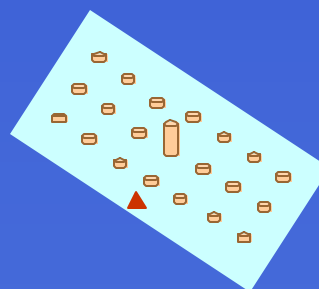
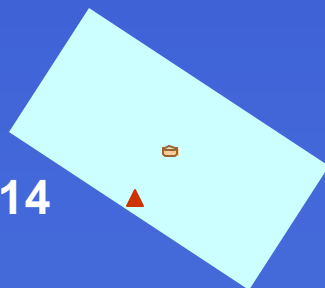
After 25 dumps



After 45 dumps

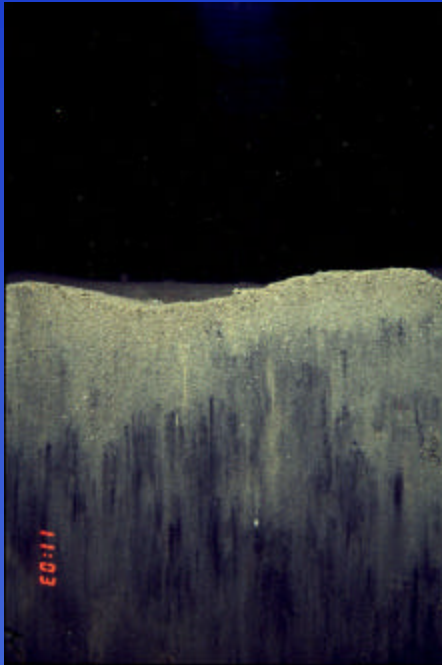


Cell LU - Station 14



Spreading Placement

Baseline

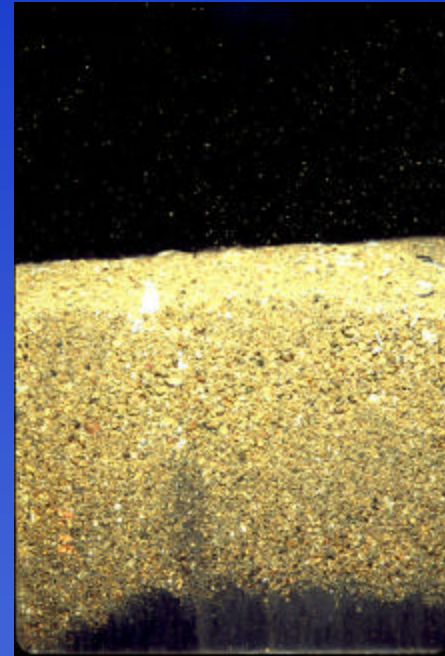


After 1 load



Cap = 2 cm

After 9 loads



Cap = 6+ cm

Cell LD - Station 9



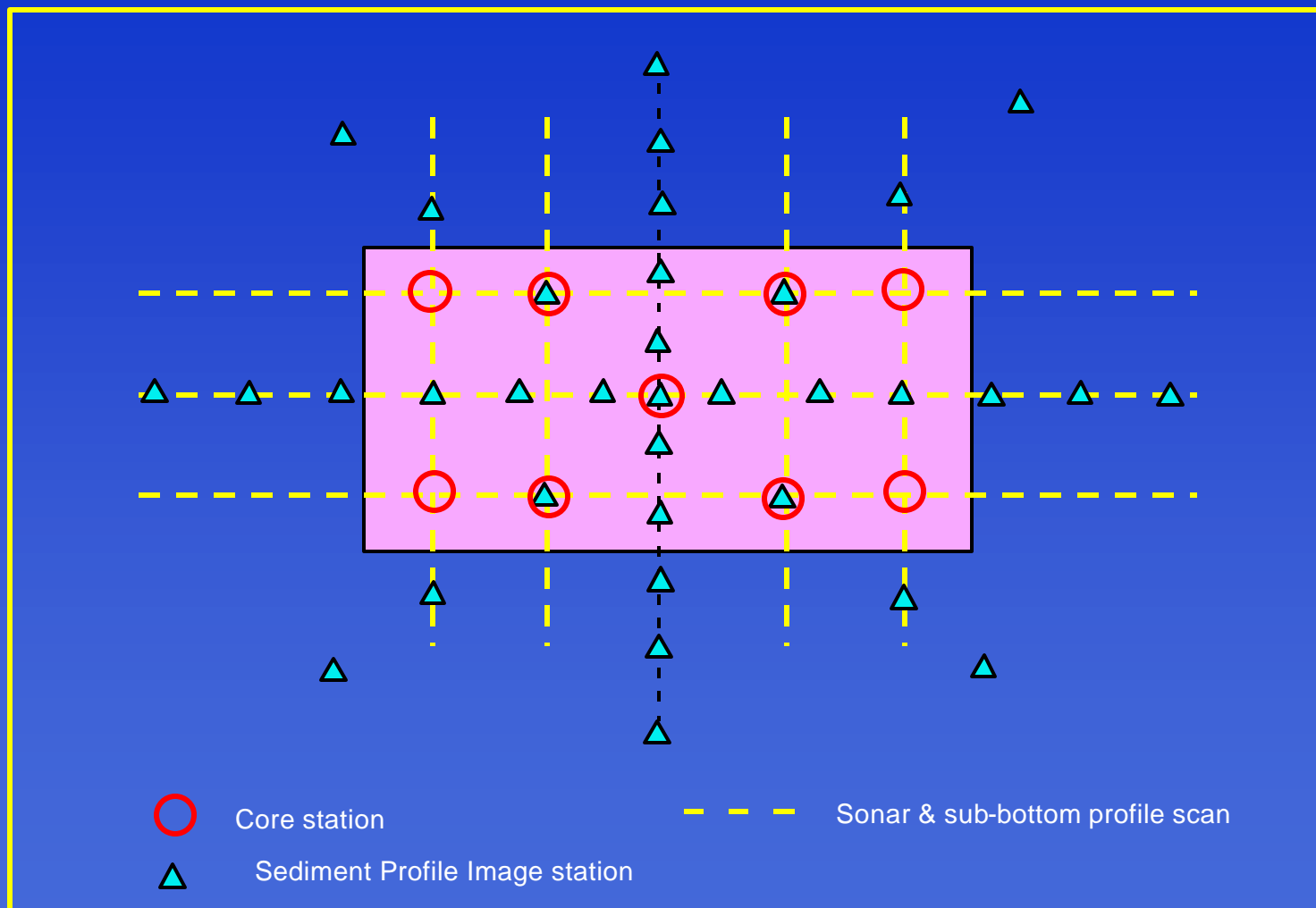
Monitoring Program

When: Before, during and after cap placement

How:

- Sediment Cores
- Sediment Profile & Plan View Photos
- Water Samples
- Side-scan Sonar
- Current meters
- ADISS system on dredge
- Underwater video
- Acoustic sub-bottom profiling

Typical Monitoring Grid



Preliminary Results

- ' Disturbance of contaminated sediments was relatively localized and decreased substantially after the initial load was placed.
- ' Sediment plumes caused by capping did not pose a risk to nearshore kelp beds.
- ' Spreading was less disruptive than conventional placement
- ' There were no indications of mass sediment movement (such as mud waves or turbidity flows) as a result of capping.

Schedule

Summer 2001	Action Memo for institutional controls Report on Pilot Capping Project
Winter 2001	Report on Ecological Risk Evaluation
Early 2002	Supplement to EE/CA & decision on proposing a capping remedy